REMARKS

This Amendment is in response to the Office Action dated April 21, 2005. In the Office Action, the Examiner rejected claims 1-9, 11 and 12 under 35 U.S.C. § 102(b) as being unpatentable over Limon, Jr. et al., U.S. Patent No. 6,453,435 (hereinafter *Limon*). Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Limon* in view of Neal, U.S. Patent No. 4,550,406.

Claim 9 has been amended to correct an inadvertent typographical error. Claims 1-12 remain pending in the application. For the reasons set forth below, the Applicants respectfully request reconsideration and allowance of all pending claims.

Claim Rejections - 35 U.S.C. § 102

A claim is anticipated only if each and every element of the claim is found in a single reference. M.P.E.P § 2131 (citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628 (Fed. Cir. 1987)). "The identical invention must be shown in as complete detail as is contained in the claim." M.P.E.P. § 2131 (citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226 (Fed. Cir. 1989)).

With respect to the rejection of claim 1, the Examiner asserts *Limon* teaches,

a method for testing a computer system board comprising:

loading the computer system board into a test apparatus (see col. 4, lines 35-42 and col. 12, lines 46-65);

automatically coupling a power input to the circuit board via the test apparatus (see col. 5, line 60 to col. 6 line 12);

automatically performing a plurality of computer system board tests (see col. 6, lines 49-57); and

storing results of the automatic testing (col. 16 line 60 to col. 17 line 4).

Claim 1 has been amended to more clearly recite features of the claimed invention. In particular, the second sub-paragraph now recites,

automatically coupling a connector to provide power input to the computer system board via the test apparatus;

Applicants respectfully assert that *Limon* does not teach all of the claim elements of amended claim 1.

Limon discloses a method and apparatus for automated testing of circuit boards. As stated in the abstract,

> A test station is provided to test a circuit board unit. The test station includes a disk drive storing uncompiled files which are interpretatively processed in order to carry out test operations. A bar code reader can scan a label on the unit, in order to accurately identify the unit. The label information can be used to ensure accurate programming of any programmable devices on the unit, and accurate selection of the correct test definition files for the unit. *Step-by-step instructions can be provided to an operator regarding every* manual *act required during a test definition, and can include a graphic image of each such* manual *act.* The test station can have two different test modes, where at least one command of the test definition is carried out for one mode but not the other. The test station has a debug mode, which includes capabilities for breakpoints, step mode, dynamic alteration of test definitions, and dynamic observation and alteration of variables. (Emphasis Added)

With respect to the statement that *Limon* teaches "Automatically coupling a power input to the circuit board via the test apparatus (see col. 5, line 60 to col. 6 line 12)," applicants respectfully assert that these elements are not disclosed in the recited text when considering the term "couple" in the context of the present specification and figures. However, the terminology of coupling a *connector* to provide power input has been added to amended claim 1 to make it clear that power input is provided to the circuit board, in part, via automatically coupling a connector over which the power input is carried.

With respect to the foregoing, text disclosed in *Limon* makes it clear that *Limon*'s apparatus does not automatically connect any connector or component, much less a connector to provide a power input.

With respect to providing input power to a computer system board (the optical board employed by *Limon* to illustrate the *Limon* apparatus is called a unit under test (UUT), it is clear that power is provided to the UUT via tester connector 36, which is manually coupled to UUT connector 37. For example, as illustrated in Figure 1, "the

test station 23 includes a tester connector 36, to which can be *releasably coupled* a UUT connector 37 that is provided on tile UUT 13" (Col. 4, lines 62-64, emphasis added). As further stated in col. 5, lines 60-65,

> The test station 23 includes a power supply 83, which is coupled to the GPIB bus 82, so that the power supply 83 can be controlled by the workstation 41 through the GPIB bus 82. *The power supply 83 has outputs which are coupled to the tester connector 36, so that the power supply 83 can supply power to the UUT 13.* (Emphasis added)

It is clear from above that power is provided to UUT 13 through tester connector 36, which can be releasably coupled to UUT connector 37. Similar, various cables may be releasably coupled to UUT 13:

> The UUT 13 is a circuit board, which has thereon a header 101, to which an end of the parallel cable 77 can be releasably coupled, and circuitry 102 defining a network port which includes a connector to which one end of the network cable 79 can be releasably coupled. The UUT 13 further includes an optical connector 103 to which one end of the optical cable 97 can be releasably coupled, and a further optical connector 104 to which one end of the optical cable 96 can be releasably coupled. The UUT 13 has circuitry 107 thereon, which is electrically coupled to the UUT connector 37, the header 101, and the network port 102. (Col. 6, lines 16-26, emphasis added).

During a test sequence, each of the forgoing connectors is *manually* coupled or connected by an operator. More particularly,

> After the operator scans the bar code label, the system proceeds to block 208, *where it prompts the operator to couple the connector 37 on the UUT 13 to the tester connector 36 of the test station 23, and then waits for the operator to do so at block 209. The operator does not yet connect to the UUT 13 any of the other cables 77, 79, and 96-97, as there will be separate prompts later for any or all of these cables.* When the operator has coupled the connectors 36 and 37 together, the operator responds to the prompt by pressing the ENTER key on the keyboard 43, or by some other similar action, which causes the system to proceed from block 209 to block 212. (Col. 12, lines 28-39)

It is clear that under *Limon*'s apparatus, all of the connectors, including a connector providing power input, are manually connected by an operator. In contrast, under the claimed invention, connectors and/or components are automatically coupled or inserted by the test apparatus itself. This is hugely beneficial, as the operator merely

has to load the test board into the apparatus (*e.g.*, put the board on carrier plate 114 and push the carrier plate in, close the door), and press a start button to activate an automated test cycle. (See, *e.g.*, Fig. 7a.) There is no need for the laborious manual connection of various connectors, nor the extra cycle time to do so.

It is clear from above the *Limon* does not teach or disclose the element of "automatically coupling a connector to provide power input to the circuit board via the test apparatus." Accordingly, amended claim 1 is clearly patentable over *Limon*, as well as the other cited art. Additionally, since each of claims 2-12 depend either directly or indirectly from claim 1, these claims are likewise patentable for at least the same reasons.

With further respect to claim 5, the Examiner asserts that *Limon* further teaches "that the plurality of system board tests include testing a video subsystem of the computer system board (see col. 4, lines 36-43). This portion of *Limon* states,

> FIG. 1 is a block diagram of an apparatus 10 which embodies the present invention, and which includes a test system 12 capable of testing a unit under test (UUT), one exemplary UUT being shown at 13. The exemplary UUT 13 shown in FIG. 1 is a telecommunications circuit board of a type commonly known as an optical board. However, the system 12 is also capable of testing a variety of other types of circuit boards.

This merely indicates that other types of circuit boards could be (generally) tested, but there are absolutely no details in *Limon* that discuss testing a video subsystem, what signals are provided to the video subsystem, *etc.* Accordingly, the rejection of claim 5 is improper and should be withdrawn.

With further respect to claim 6, the Examiner asserts *Limon* further teaches the claim element of automatically inserting one or more memory devices into corresponding connectors on the computer system board (see col. 4, lines 52-67). The cited portion of the *Limon* specification concerns the overall test system configuration, and says nothing about automatically inserting anything, much less automatically

inserting one or more memory devices into corresponding connectors. Accordingly, the rejection of claim 6 is improper and should be withdrawn.

The applicants respectfully assert that a similar rejection by the Examiner with respect to claim 7 is likewise not supported by *Limon*. In particular, with respect to claim 7, *Limon* does not teach automatically inserting a microprocessor into a corresponding connector on the computer system board. Again, the text cited by the Examiner (col. 4, lines 52-67) merely discussed the overall test system configuration, and says nothing about automatically inserting anything. Accordingly, the rejection of claim 7 is improper and should be withdrawn.

With further respect to the rejection of each of claims 8 and 9, applicants respectfully assert these rejections are improper and should be withdrawn. With respect to claim 8, the examiner asserts that *Limon* "further teaches comprising automatically coupling a peripheral card to an expansion slot on the computer system board (see col. 5, lines 23-29)." This portion of *Limon* states,

> The workstation 41 has a standard RS232 serial port 61, which is coupled to a serial-to-parallel conversion circuit 63 disposed in the test station 23. The circuit 63 is in turn coupled to a plurality of bidirectional drivers 64 that are coupled to the test connector 36. The workstation 41 also includes a digital input/output (I/O) card 67, which is a commercially available plug-in card.

Whether or not the workstation includes a plug-in card is irrelevant. Claim 8 explicitly recites "... *automatically coupling* a peripheral card to an expansion slot on the computer system board. Such is not taught or suggested by *Limon*.

With further respect to claim 9, the Examiner asserts that *Limon* teaches the elements of, "automatically connecting test electronics to at least one input/output (I/O) port connector," citing the statement, "The workstation 41 also includes a digital input/output (I/O) card 67, which is a commercially available plug-in card." The fact that the workstation includes an I/O card is again irrelevant. The claim requires

automatically connection test electronics to at least one input/output (I/O) port connector. This is clearly not taught or suggested by *Limon*.

Conclusion

Overall, none of the references singly or in any motivated combination disclose, teach, or suggest what is recited in the independent claims. Thus, given the above amendments and accompanying remarks, independent claim 1 is now in condition for allowance. The dependent claims 2-12 that depend directly or indirectly on these independent claims are likewise allowable based on at least the same reasons and based on the recitations contained in each dependent claim.

If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to the allowability of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (206) 292-8600.

Charge Deposit Account

Please charge our Deposit Account No. 02-2666 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,

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